I. Summary of Office Action

Claims 1-21 are pending in the application.

Claims 1-2 and 16-21 were rejected under 35 U.S.C. § 102(b) as being unpatentable over U.S. Patent No. 5,870,564 to Jensen et al. (hereinafter, "Jensen"). The Examiner also rejected claims 3-7 and 11-14 under 35 U.S.C. § 103(a) as being unpatentable over Jensen in view of U.S. Patent No. 6,490,451 to Denman et. al (hereinafter, "Denman"). Claims 8-10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jensen in view of U.S. Patent No. 6,622,157 to Heddaya et al. (hereinafter, "Heddaya"). Claim 15 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Jensen in view of Denman and U.S. Patent No. 6,542,758 to Chennakeshu et. al (hereinafter, "Chennakeshu"). The Office Action also relies on "Randomized Adaptive Routing Based on Mobile Agents" by Mark Bui et al. (hereinafter, "Bui") in discussing Jensen.

II. Summary of Applicants' Reply

FIG. 3 has been amended to correct a typographical error.

Claims 1, 3, 8, 11, 16, and 18 have been amended. The amendments to the claims are being made solely to expedite prosecution or correct obvious typographical errors, and do not constitute acquiescence to any of the Examiner's objects to or rejections of the claims. Support for the amendment to the claims can be found throughout the present application. Applicants reserve the right to prosecute the subject matter of any claim that was amended in one or more continuation, continuation-in-part, or divisional applications.

The Examiner's rejections of claims 1-21 under 35 U.S.C. §§ 102(b) and 103(a) are respectfully traversed.

New claims 22-31 have been added.

Reconsideration of this application is respectfully requested.

III.   Amendment to FIG. 3

FIG. 3 has been amended to correct a typographical error. A replacement sheet and a marked up sheet identifying the correction are provided.

IV.   The Rejections of the Claims Under 35 U.S.C. §§ 102(b) and 103(a)

<u>The Prior Art Jensen Patent</u>

Jensen describes a dynamic method for providing a path through a network of nodes. Jensen determines a path based on a cost or distance function associated with various paths. Each next edge in a path may lie ahead, across an advancing partial wavefront toward a new candidate node being considered for the path. As the wavefront advances, potential paths that were being considered can be dropped from consideration. Thus, a partial wavefront continues to evaluate some number of best paths seen so far as Jensen determines a path. Jensen also discloses that connections between mathematical nodes in a connected graph may be characterized as mathematical edges and discusses a model of a graph where adjacent pixels in a Cartesian grid share mutual edges.

<u>The Prior Art Bui Paper</u>

As discussed by the Examiner, Bui describes nodes interconnected with links where a path from one node to another can be denoted by a series of nodes.

<u>The Present Claims</u>

Applicants will focus this response on Claim 1, which was rejected under 35 U.S.C. § 102(b) as being unpatentable over Jensen. Claim 1 is directed to a network comprising a plurality of nodes interconnected by links. For example, FIG. 3 shows a network including a plurality of nodes (i.e., A-H) interconnected by links. In this example, by taking only any one of the coordinate labels assigned to a first node and combining it with any one of the coordinate labels assigned labels assigned to a second node, a path between the first node and the second node can be determined.

Claim 1 recites that "each Node is assigned a set of one or more coordinate labels, each of said coordinate labels representing a path <u>to at least one origin</u>." Assume, for this example of

FIG. 3, there is one origin, Node A, and Nodes B-H are not origins. FIG. 3, shows each node B-H assigned one or more coordinate labels comprising one or more Links. Node C, for example, is assigned coordinate labels 31, 212, 1312, and 121412. As can been seen, these links define "a connection between two Nodes or between a Node and the at least one origin." For example, label 3 of coordinate label 31 identifies the link between Node C and Node B. Furthermore, "each of said coordinate labels includes at least one label that each identify a corresponding one of said one or more Links in said path." That is, for example, each of label 3 and label 1 of coordinate label 31 identifies a corresponding link (i.e., link 3 and link 1) in the path 31, which represents "a path to at least one origin comprising one or more Links" (i.e., like each of the coordinate labels of node C, 31 represents a path from node C to the origin node A).

Claim 1 also recites

a path between a first Node and a second Node that includes at least a third Node between said first Node and said second Node being determined by combining at least a part of at least one of said at least one label of one of said coordinate labels assigned to said first Node and at least a part of at least one of said at least one label of one of said coordinate labels assigned to said second Node

For example, again referring to FIG. 3, a path between node F (a first Node) and node C (a second Node) that includes at least a third Node (nodes G and D) can be determined by combining a part of a coordinate label assigned to F (412) and a part of coordinate label assigned to C (1312). This combination determines a path, 431, that defines a path between node F and node C which passes through nodes G and D. In this particular example, the combining includes removing a common portion (12) from each of 412 and 1312, as recited in dependent claim 24 and reversing the order of 13 to 31, as recited in dependent claim 25 (i.e., (4~~12~~ + reverse(13~~12~~)) = 413 = a path between F and C that passes through G and D).

The Claims are Patentable over the Art of Record

The Examiner relies in part on a Jensen referring to a Cartesian grid in rejecting the claims. The Examiner also relies on Jensen showing "using mathematical nodes in showing connections in Cartesian, i.e., coordinated (labeled) nodes and links as per" Bui. (Office Action, page 16). However, neither a Cartesian coordinate, nor any label allegedly disclosed in Jensen (whether or not Bui is relied on to provide background in support of an interpretation of Jensen), teaches or suggests a coordinate label that includes "at least one label that each identify a

11

corresponding one of said one or more Links in said path," as recited in claim 1. Instead, Cartesian coordinates have two or more numbers each of which represent a point in a dimension of the Cartesian space <u>merely as a function of distance</u> from an origin. Cartesian coordinate labels do not teach or suggest a path, let alone "a path to at least one origin comprising one or more Links, wherein a Link is a connection between two Nodes or between a Node and the at least one origin."

Furthermore, a function of distances in Cartesian space is a measure directly from an origin. This is also in contrast to claim 1, which recites coordinate labels comprised of links where a link is "a connection between two Nodes or between a Node and the at least one origin" and where the path being defined is "between a first Node and a second Node <u>that includes at least a third Node between said first Node</u>." Even if Cartesian coordinate labels did teach or suggest a path, which Applicants contend they do not, the path would be defined merely as a function of distances from an origin, not as being comprised of "one or more Links, wherein a Link is a connection between two Nodes or between a Node and the at least one origin" where the path "<u>includes at least a third Node between said first Node</u>."

To further clarify the differences between the prior art of record and of claim 1, Applicants refer to FIG. 3 of the present application, which illustrates node H having the set of coordinate labels 2, 1231, 13131, and 1412131. Take coordinate label 1231, for example. This coordinate label includes labels 1, 2, 3, and 1, each of which "identify a corresponding one of said one or more Links in said path." In this example, the first 1 identifies the link between nodes H and G, the 2 identifies the link between nodes G and C, the 3 identifies the link between nodes C and B, and the second 1 identifies the link between B and A (the origin). In contrast, Cartesian coordinates do not include labels that identify a <u>link</u> in a path, "wherein a Link is a connection between two Nodes or between a Node and the at least one origin" let alone a link in a "path between a first Node and second Node that includes at least a third Node between said first Node and said second Node."

Claim 1 also recites:

a path between a first Node and a second Node that includes at least a third Node between said first Node and said second Node being determined <u>by combining</u> at least one of said at least one label of one of said coordinate labels assigned to said first Node and at least one of said at least one label of one of said coordinate labels assigned to said second Node

Nothing in Jensen teaches or suggests <u>combining</u> labels as recited. For example, nowhere in Jensen is there any disclosure or suggestion that anything, including Cartesian coordinates, is combined together to determine a path. Instead of combining labels to determine a path, Jensen determines a path using an advancing wavefront where potential paths that were being considered can be dropped from consideration thus forming a "partial" wavefront that continues to evaluate some number of best paths "so far." (Jensen, Abstract). Nothing in Jensen's path calculation method teaches or suggests combining anything, let alone combining coordinate labels as claimed.

The Examiner also refers to Bui and states that "a path from a node i to another node j are denotes [sic] by a series of nodes where (i, n_1), $(n_x,{}_{nx+1})$, (n_k, j) are links (Fig. 2) in the path." (Office Action, page 16). However, "a path ... denot[ed] by a series of nodes" does not teach or suggest "coordinate labels, each of said coordinate labels representing a path <u>to the at least one origin</u> comprising one or more <u>Links</u>, wherein a Link is a connection between two Nodes or between a Node and the at least one origin." The Examiner has specifically noted that the path relied on is merely defined by "a series of <u>nodes,</u>" instead of "one or more <u>Links</u>" as recited claim 1. In any event, any label allegedly disclosed in Bui does not define "<u>a path to the at least one origin</u>" as required by claim 1. For example, the "functional bidirectional link[s] connecting the nodes i and j represent[ed] as (i,j)" (Bui, section 2, paragraph 1) do not define paths "<u>to at least one origin,</u>" instead they merely defines a link between two adjacent nodes. Nor does Bui teach or suggest that functional bidirectional links, or anything else for that matter, be combined to determine a path as recited in claim 1.

Applicants note that independent claims 1, 3, 8, and 11 recite, for example, "coordinate labels representing a path <u>to at least one origin,</u>" claim 16 recites an analogous feature that "each coordinate label representing a path comprising one or more Links through said network from one of said plurality of second Nodes to which it is assigned <u>to said first Node,</u>" and claim 18 recites an analogous feature that "each coordinate label representing a path comprising one or more Links from said Node <u>to a particular other Node.</u>" In addition, each independent claim recites combining coordinate labels of two nodes to determine a path between those two nodes. Applicants' independent claims 3, 8, 11, 16, and 18 are therefore allowable for at least the same reasons provided with respect to independent claim 1.

Applicants also respectfully request that, if the application is not allowed, any further Office Action issued comply with 37 CFR § 1.104(c), that "the particular part [of the reference] relied on must be designated as nearly as practicable." Although the Office Action points to (1) the abstract, (2) column 6, line 65 through column 7, line 8, (3) column 8, lines 9-13 and 42-46, and (4) column 18, lines 19-34, it is not clear what the Examiner is asserting within these four sections as showing "coordinate labels" as recited in the claims. While these various sections mention networks, nodes or granules, edges, a Cartesian grid, and paths, the Office Action has provided no indication of where in the sections there are teachings or suggestions that any form of labels, let alone coordinate labels as described in the claims, are used in connection with the described nodes. Rather, in violation of 37 C.F.R. § 1.104(c)(2), the Office Action has simply compiled a disjointed list of features of Jensen without providing any indication as to how they relate to the claim element being asserted by the Examiner as being disclosed by the reference. The "Response to Arguments" (Office Action, page 16) has not resolved this inadequacy. Specifically, the Examiner has still not identified how he believes a Cartesian coordinate label combined with any other part of Jensen to teach or suggest a coordinate label as recited in claim 1 and has instead admitted that he is "merely use [sic] the cited reference to point out the common usage of 'Cartesian coordinate' to label some mathematical element, here in Jensen it is a node." Applicants respectfully note that they are not merely claiming "some mathematical element" nor "a path as a serious [sic] of links or connections" but instead, are claiming the combination of elements recited in the claims. Applicants do not deny that "Jensen does have the notion of link and path," that Jensen uses the language "mathematical nodes," or that Bui shows a path defined by a series of nodes. However, none of this, as described above and in Applicants' previous replies, teaches or suggests, for example, coordinate labels <u>as claimed</u>, let alone combining the coordinate labels to determine a path.

Applicants also respectfully note that "[t]o anticipate, <u>every element and limitation</u> of the claimed invention must be found <u>in a single prior art reference, arranged as in the claim</u>." <u>Brown v. 3M</u>, 265 F.3d 1349, 60 USPQ2d 1375 (Fed. Cir. 2001) (emphasis added). While Applicants respectfully maintain their assertion that Jensen does not teach or suggest every element of claim 1 and that the Examiner has not made out a prima facia case of anticipation, Applicants respectfully remind the Examiner that any art used to teach or suggest every element of a claim must also teach or suggest the elements "arranged as in the claim." Applicants

14

respectfully state that even if it were possible to determine what from the disjoint list of features provided by the Examiner, or from any other portion of Jensen, corresponds to what in the claim language, the Examiner would still not have shown how any interpretation teaches or suggests the elements "arranged as in the claim." Furthermore, though Bui does not aid in interpreting Jensen to teach or suggest the claimed combination of elements, to any extent that the Examiner is relying on Bui to teach or suggest the arraignment of claimed elements, Applicants respectfully remind the Examiner that Bui cannot be used in a 35 U.S.C. § 102(b) rejection under Jensen to teach or suggest the arrangement of elements as claimed because the arrangement must be found "in a single prior art reference."

In addition, with specific reference to claim 16, the Office Action has not provided any indication of what the Examiner believes to teach or suggest the "first Node" or "assigning to each of said second Nodes one or more coordinate labels, each coordinate label representing a path comprising one or more Links through said network from one of said plurality of second Nodes to which it is assigned to said first Node." Instead, the Examiner has provided the same disjointed list of features of Jensen used in rejecting a portion of claim 1 with no indication of what he believes to show or suggest the "first Node." Applicants respectfully state the same in reference to the "particular other Node" recited in claim 18.

Based on the foregoing Amendment and Remarks, Applicants traverse the Examiner's rejection of claims independent claims 1, 3, 8, 11, 16, and 18. Accordingly, Applicants respectfully request that the rejections of the claims be withdrawn.

Applicants' silence with regard to the Examiner's rejections of the dependent claims constitutes a recognition by the Applicants that the rejections are moot based on Applicants' remarks relative to the independent claims from which the dependent claims depend. Accordingly, Applicants also respectfully submit that claims 2, 4-7, 9-10, 12-15, 17, and 19-21 each of which depends from one of independent claims 1, 3, 8, 11, 16, and 18, are allowable for at the same reasons that their corresponding independent claims are allowable.

V.   New Claims 22-31

Support for claims 22-31 can be found throughout the present application. Each of claims 22-31 is dependent from one of independent claims 1, 3, 8, 11, 16, and 18 is therefore allowable for at least the same reasons. Furthermore, nothing in the prior art of record teaches or

suggests the combination of elements recited in any of claims 22-31. For this reason also, Applicants respectfully submit that claims 22-31 are allowable and such allowance is respectfully requested.

VI. Deposit Account Authorization

The Director is hereby authorized to charge any fees that may be due, or to credit any overpayment of the same, to Deposit Account No. 08-0219.

In the event that any extension of time is required in addition to that requested in any petition for extension of time filed previously or herewith, the Director is requested to grant a petition for that extension of time which is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to Deposit Account No. 08-0219.

VII. Conclusion

For at least the reasons set forth above, Applicants respectfully submit that the present application, as amended, is in condition for allowance. Reconsideration and prompt allowance of the application are respectfully requested.

Respectfully submitted,
Wilmer Cutler Pickering
Hale and Dorr LLP

/Michael Halas/
Dated: November 26, 2007   Michael Halas
                                            Patent Agent for Applicants
                                            Registration No. 59,371

Wilmer Cutler Pickering Hale and Dorr LLP
Customer No. 28089
399 Park Avenue
New York, NY 10022-4614

Tel: 212-230-8800
Fax: 212-230-8888